



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION OF

Confirmation No.: 4555

DOUBLE et al.

Group Art Unit: 1752

Application No.: 10/049,610

Examiner: Richard L. Shilling

Filed: June 6, 2002

Title: THERMALLY-TRANSFERABLE POLYESTER IMAGE-PROTECTING LAYER

\* \* \* \* \*

DECLARATION UNDER 37 C.F.R. § 1.132

Hon. Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Andrew Clifton, Ph.D., hereby declare that:

1. I am employed as a Technical Manager by ICI Imagedata, which is part of Imperial Chemical Industries PLC, the assignee of this application, in the area of polymer coatings, and have occupied this position since September 2002. I obtained a BSc in Pure Chemistry from City University and was awarded a Ph.D. in Polymer Chemistry by the University of Bath in 1994. Since 1993 I have worked with polymers, as a European Community Post-Doctoral Fellow and Research Scientist at Imperial Chemical Industries PLC.
2. I am familiar with the chemistry and the properties of polymer materials, including polyesters and polycarbonates.
3. The term "polyester" is used in the chemical industry to refer to materials which comprise an ester linkage (-O-CO-) in the main chain polymer backbone. Thus, materials

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such as poly(vinyl acetate) and poly(methyl methacrylate) which have pendant ester groups are not regarded as polyesters despite containing the ester moiety on each repeat unit.

4. The term "polycarbonates" is used in chemical industry to mean polymeric materials where the carbonate linkage (-O-CO-O-) is present in the polymer backbone.

5. Polymers where more than one monomer is present are regarded as copolymers; thus, polyesters and polycarbonates can be regarded as copolymers. In the case of polycarbonates all polymers contain the same acid monomer, whereas polyesters can have variable acid and alcohol functional monomers.

6. In broad terms polycarbonates could be regarded as esters of carbonic acid. This view, however, oversimplifies matters as it does not take account of the fact that the main functional group in the polymer backbone is distinct from that of all other polyesters. This is a very important point, as it is this main chain functional group which imparts many of the generic polymer properties to a class of polymer materials. Because of this fundamental structural difference, polycarbonates generally exhibit different properties to those of polyesters, having much higher tensile strength, lower thermal conductivity, lower density. As a result, polyesters and polycarbonates are regarded by formulation scientists as distinct classes of polymer materials. This is evidenced by their separation in the attached extract from "Guide to Plastics, Property and Specification Charts," which is a standard reference work in the plastics industry where both polycarbonates and polyesters are dealt with independently.

7. Thus, in the plastics industry, polyesters and polycarbonates are viewed as different classes of materials. As a further example, polyamides are a distinct class of polymers which contain the -NH-CO- repeat unit in the main polymer backbone, differing from polyesters in that they contain nitrogen in place of one oxygen atom in the main functional group. Polyurethanes differ from polyamides only in the presence of additional oxygen, i.e., -NH-CO-O-, are nevertheless considered to be a different class of polymer materials, distinct from polyamides.

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8. I am familiar with the specification of U.S. Patent Application No. 10/049,610 and corresponding European Patent Application No. 00946167.4, which concern thermal transfer media having a coating layer of polyester having certain properties. In my opinion, the term "polyester" as used in the specification is used in the sense discussed above to refer to a particular class of polymer materials.

9. I am also familiar with the Office Action dated April 9, 2004 and EP 0917964A2, a reference cited by the examiner in the Office Action. EP 0917964.2 discusses the use of aromatic polycarbonate resins as the protective layer in a protective layer transfer sheet. In my opinion, the term "polycarbonate" is used in this document in the sense as discussed above to mean a particular class of polymer materials, different from polyesters. "Polycarbonates" as used in this sense would not be understood by someone in the polymer field as encompassing "polyesters." Polycarbonates and polyesters are viewed as two distinct classes of materials, as discussed above.

10. I hereby declare that all statements made herein, of my own knowledge are true and that all statements made on information and belief are believed to be true. Further, I also declare that these statements were made with knowledge that willful false statements, and the like, so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code. I also declare that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

  
Andrew Clifton, Ph.D.

3/8/2004  
Date

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